

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002914**Date Inspected:** 17-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 500**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai China**CWI Name:** Chen Chih-Ming / Chen Xi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG side, bottom and deck panels**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance Inspector (QA) Steve Hall was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

OBG new assembly bay 2

ZPMC QC reported 5 cracked tacks to Caltrans QA. The cracked tacks were discovered during a visual inspection of the tacks on side panel joint SEG-021A-003 SP-118A to SP-145A. ZPMC elected to MT all of the tacks on this joint. No other cracks were detected. ZPMC removed the cracked tacks by grinding and then MT'ed the areas where the tacks were removed. QA observed all of the above however, ZPMC had not re-tacked these areas prior to QA departing the area.

QA observed ZPMC qualified welding personnel perform SMAW 4G welding on SEG-013A-031 SP-025A to BP-001A following the guide lines of WPS# WPS-B-P-2214-B-U2. QC monitored the welding process continuously throughout the evening. The welding parameters as measured with Quality Controls calibrated instruments appeared to be in conformance with the posted WPS's and were as follows:

Volts: 24 Amps: 155 Travel speed: 80mm/min

QA observed ZPMC qualified welding personnel perform SAW on SEG-021-009 SP-509 to SP-469 following

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the guide lines of WPS# WPS-B-T-2221-B-L2c-S-1. QC monitored the welding process continuously throughout the evening. The welding parameters as measured with Quality Controls calibrated instruments appeared to be in conformance with the posted WPS's and were as follows:

Volts: 30 Amps: 532 Travel speed: 465mm/min

Other general observations include ZPMC personnel grinding side and bottom panels and weld bevel prep.

OBG Bay 1

QA observed ZPMC qualified welding personnel SAW final pass on gantry 2 DP-493-001.

QA performed 10% verification Ultrasonic Testing (UT) on the following u-rib diaphragm plates: DP-592-001 welds 105 to 124. ZPMC rejected weld 120. All other welds appeared to be compliant with AWS D1.5 2002 and the contract documents.

QA observed ZPMC qualified welding personnel performed the Gas Metal Arc Weld (GMAW) and Submerged Arc Weld (SAW) 3 Rib PMT# 1 and 2 for deck panels DP-541-001 and DP-611-001 on gantry #1. PMT #1 was rejected by ZPMC due to excessive length of incomplete fusion on welds 1 and 4. ZPMC welding personnel commenced welding PMT #2 for gantry #1 at 02:12 hrs for the above mentioned deck panels. QC and QA visually inspected and accepted 500mm segments of each weld on this PMT panel. ZPMC's QC Ultrasonic Testing (UT) technician ultrasonically inspected and accepted the same 500mm segments of each weld based on the depth of penetration acceptance criteria for closed Rib to deck plate Partial Joint Penetration (PJP) welds specified in the contract documents. Caltrans waived the UT for this PMT today. QA laid-out, match marked and stenciled 5 macro specimens on each PMT rib. QA completed a U-Ribs PMT inspection report for this date and gantry. The report is on file in the Caltrans QA office. The welding parameters and welder ID's for Gantry 1 PMT #2 are as follows:

GMAW

Volts: 30 – 30.1 Amps: 354 – 383 Travel speed: 535mm/min

SAW

Volts: 24.3 – 25.2 Amps: 671 – 690 Travel speed: 520mm/min

Welder ID#'s

Weld joint 1: 059464

Weld joint 2: 059400

Weld joint 3: 201728

Weld joint 4: 059421

Weld joint 5: 059445

Weld joint 6: 059443

Other general observations by QA were as follows:

QA observed ZPMC has approximately 45 workers performing various functions relative to the fabrication of

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the OBG Deck Panels. These functions include; closed rib press forming, hole drilling at ends of U-Ribs using a drill template, PJP bevel preparation, closed rib splice FCAW welding, closed rib diaphragm fit-up and FCAW welding, closed rib to deck plate fit-up and tack welding.



Summary of Conversations:

Only general conversations were held between QA and QC concerning this project.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or

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remedial efforts please contact Patrick Lowry (858)-344-2712, who represents the Office of Structural Materials for your project.

Inspected By:	Hall,Steven	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
